

# **INFORMATION HANDOUT**

**For Contract No. 07-1W5104**

**At 07-LA-5718**

**Identified by**

**Project ID 0712000296**

07-1W5104

07-LA-5718

Project ID 0712000296

## **COASTAL DEVELOPMENT PERMIT**

City of Malibu Planning Commission Resolution and Acceptance of Condition Affidavit

## **MATERIALS INFORMATION**

Geotechnical Design Report for Las Flores Maintenance Station

**CITY OF MALIBU PLANNING COMMISSION  
RESOLUTION NO. 14-78**

**A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MALIBU APPROVING COASTAL DEVELOPMENT PERMIT NO. 12-068, VARIANCE NOS. 14-014 AND 14-015, AND SITE PLAN REVIEW NO. 12-047 FOR THE CONSTRUCTION OF A NEW WASH RACK THAT INCLUDES A 1,254 SQUARE FOOT, 24 FOOT HIGH CANOPY THAT INCLUDES DOWN LIGHTING, INSTALLATION OF A WATER TREATMENT SYSTEM TO SERVE THE WASH RACK, 48 SQUARE FOOT EQUIPMENT SHED, UNENCLOSED VACUUM STATION, SANITARY DUMP STATION, AND REMOVAL AND REPLACEMENT OF EXISTING ASPHALT IN THE PROJECT AREA, INCLUDING A VARIANCE TO ALLOW FOR DEVELOPMENT THAT ENCROACHES WITHIN THE PROTECTED AREA OF A SYCAMORE TREE AND A COASTAL LIVE OAK TREE, A VARIANCE FOR THE REDUCTION OF THE REQUIRED SIDE YARD SETBACK TO ALLOW FOR THE REPLACEMENT OF THE WASH RACK, AND A SITE PLAN REVIEW FOR CONSTRUCTION ABOVE 18 FEET, UP TO 24 FEET LOCATED AT 3503 LAS FLORES CANYON ROAD, IN THE INSTITUTIONAL ZONING DISTRICT (CALIFORNIA DEPARTMENT OF TRANSPORTATION)**

THE PLANNING COMMISSION OF THE CITY OF MALIBU DOES HEREBY FIND, ORDER AND RESOLVE AS FOLLOWS:

**Section 1. Recitals.**

- A. On September 27, 2012, Coastal Development Permit (CDP) application No. 12-068 was filed with the City for the subject property.
- B. On May 1, 2014, a Notice of Coastal Development Permit Application was posted on the subject property.
- C. On May 8, 2014, the application was deemed complete for processing.
- D. On May 28, 2014, the project was presented to the City's Environmental Review Board for project specific recommendations.
- E. On July 10, 2014, a Notice of Public Hearing was published in a newspaper of general circulation within the City of Malibu and was mailed to all property owners and occupants within a 500-foot radius of the subject property.
- F. On August 4, 2014, the Planning Commission held a duly noticed public hearing on the subject application, reviewed and considered the staff report, reviewed and considered written reports, public testimony, and other information in the record.



Section 2. Environmental Review.

Caltrans processed a categorical exclusion for the National Environmental Policy Act prior to the submission of the project to the City of Malibu. Additionally, pursuant to the authority and criteria contained in the California Environmental Quality Act (CEQA), the Planning Commission has analyzed the proposal as described above. The Planning Commission has found that this project is listed among the classes of projects that have been determined not to have a significant adverse effect on the environment; and therefore, is exempt from the provisions of CEQA. The Planning Commission has further determined that none of the six exceptions to the use of a categorical exemption applies to this project (CEQA Guidelines Section 15300.2). Accordingly, a CATEGORICAL EXEMPTION will be prepared pursuant to CEQA Guidelines Section 15303(a) – New Construction. The Planning Commission has further determined that none of the six exceptions to the use of a categorical exemption applies to this project (CEQA Guidelines Section 15300.2)

Section 3. Coastal Development Permit Approval and Findings.

Based on substantial evidence contained within the record and pursuant to Malibu Local Coastal Program (LCP) Local Implementation Plan (LIP) Sections 13.7.B and 13.9, the Planning Commission adopts the findings in the staff report, the findings of fact below, and approves Coastal Development Permit (CDP) No. 12-068, Variance (VAR) Nos. 14-014 and 14-015, and Site Plan Review (SPR) No. 12-047 for the construction of a new wash rack, dispersal field, equipment shed, vacuum station, and emergency eyewash station.

The proposed project has been reviewed by the City Biologist and the City Public Works Department. The project has been determined to be consistent with all applicable LCP codes, standards, goals and policies.

**A. General Coastal Development Permit (LIP Chapter 13)**

LIP Section 13.9 requires that the following four findings be made for all CDPs.

*Finding A1. That the project as described in the application and accompanying materials, as modified by any conditions of approval, conforms with the certified City of Malibu Local Coastal Program.*

As discussed herein, the project has been reviewed for conformance with all relevant policies and provisions of the LCP. The project proposes the construction of a new covered wash rack, dispersal field, equipment shed, vacuum station, and emergency eyewash station. Based on the submitted materials, visual analysis and detailed site investigation, the proposed project, as conditioned complies with the LCP with the inclusion of the variances and site plan review for height.



*Finding A2. If the project is located between the first public road and the sea, that the project conforms to the public access and recreation policies of Chapter 3 of the Coastal Act of 1976 (commencing with Sections 30200 of the Public Resources Code).*

The project is located on the inland side of Pacific Coast Highway along Las Flores Canyon Drive and does not offer beach access. In addition, the subject property does not contain any trails as depicted on the LCP Park Lands Map. Therefore, the project conforms to the public access and recreation policies of Chapter 3 of the Coastal Act of 1976 (commencing with Section 30200 of the Public Resources Code).

*Finding A3. The project is the least environmentally damaging alternative.*

Pursuant to CEQA, this project is listed among the classes of projects that have been determined not to have a significant adverse effect on the environment and is categorically exempt from CEQA pursuant to Section 15303. The proposed project would not result in significant adverse effects on the environment, within the meaning of CEQA, and there are no feasible alternatives that would further reduce any impacts on the environment. The project will not result in potentially significant impacts on the physical environment.

The following alternatives were considered to determine which was the least environmentally damaging.

**No Project** – The existing wash rack can remain onsite for utilization by road crews; however, untreated runoff would continue to be dispersed into the ground. This alternative would not meet the goals of the proposed project.

**Alternative Location** - The proposed structure could be relocated to avoid encroachment into the drip line of existing native trees. However, this alternative would require a massive amount of site disturbance. The proposed location for the wash rack places it in the location of the current wash rack. This location was chosen because the site is currently developed with a lower and upper building pad. The upper pad is not large enough to accommodate trucks, a wash rack, and the associated water treatment infrastructure. If the wash rack were relocated on the lower pad, it could possibly require the demolition and reconstruction of the existing equipment building, oil house, or fuel pumps. This demolition would be required because the wash rack needs to be located in an area where large trucks can maneuver and access the facility. Due to the increased site disturbance, an alternative location is not expected to result in less environmental impacts.

**Proposed Project** – The proposed wash rack structure will consist of a concrete pad that is angled to capture runoff and direct it to a central drain. Directly adjacent to the concrete washdown apron is a sediment pit that will provide an opportunity for dirt and debris to be separated from the water before it travels to a 2,000 gallon oil and sand separator tank. After the oil and sand is separated from the water, it is treated in a 5,000 gallon clarifier before it is discharged to the proposed leach field. In addition, the new wash rack will be covered so that the treatment system does not become flooded during a storm. The proposed development will take place in the location of the existing wash rack which will result in minimal impacts to the site. The project also includes a new emergency eye wash station and vacuum station for the trucks. The scope of work has been reviewed and conditionally approved by the City Biologist and the City Public Works Department and meets the City's



Institutional development policies and standards. Therefore, the project, as proposed, is the least environmentally damaging alternative.

*Finding A4. If the project is located in or adjacent to an environmentally sensitive habitat area pursuant to Chapter 4 of the Malibu LIP (ESHA Overlay), that the project conforms with the recommendations of the Environmental Review Board, or if it does not conform with the recommendations, findings explaining why it is not feasible to take the recommended action.*

The project site is not designated as environmentally sensitive habitat area (ESHA); however, it is directly adjacent to riparian ESHA (Las Flores Creek) on the LCP ESHA Overlay Map. The project was reviewed by staff and it was determined that the project is sited within the existing development envelope. However, due to the encroachment into the drip line of two protected native trees, the project was reviewed by the ERB. The comments made by the Environmental Review Board have been incorporated into this resolution as conditions of approval.

**B. Variance for Encroachment of Development into the Drip Line of Both a Coast Live Oak and a Western Sycamore Tree (LIP Section 13.26.5)**

A variance is requested to allow for construction activities and development within the drip lines of two native trees. Currently, there is a native Sycamore tree directly over the existing wash rack facility. A portion of the proposed leach field for the water treatment system is located within the drip line of a Coastal Live Oak. It is not anticipated that the proposed development will negatively impact the health of the trees since there is already development located within the drip lines of both trees. Pursuant to LIP Section 13.26.5, the Planning Commission may approve and/or modify an application for a variance in whole or in part, with or without conditions, provided that it makes ten findings of fact. Based on the evidence contained within the record, the Planning Commission approves VAR No. 14-014 as follows.

*Finding B1. There are special circumstances or exceptional characteristics applicable to the subject property, including size, shape, topography, location, or surroundings such that strict application of the zoning ordinance deprives such property of privileges enjoyed by other property in the vicinity and under the identical zoning classification.*

The subject property is located in the Institutional zoning district along Las Flores Canyon Road, near the City limits and is currently developed as a California Department of Transportation (Caltrans) equipment and maintenance yard. The project proposes the replacement of the existing uncovered wash rack with a new covered wash rack that will capture and treat all runoff prior to discharging the water into the ground. The property is dominated by a slope that descends from a private driveway located along the rear property line. The proposed structure could be relocated to avoid encroachment into the drip line of existing native trees. However, this alternative would require a massive amount of site disturbance, including work within the drip line of the two native trees. The proposed location for the wash rack places it in the location of the current wash rack. This location was chosen because the site is currently developed with a lower and upper building pad. The upper pad is not large enough to accommodate trucks, a wash rack, and the associated water treatment infrastructure. If the wash rack were relocated on the lower pad, it could possibly require the demolition and reconstruction of the existing equipment building, oil house, or fuel pumps.



In addition, given the existing development onsite, no impacts to visual resources are expected with approval of the subject variance. Denial of the variance would deprive the property owner of privileges enjoyed by other properties in the vicinity that have development located within the drip line of native trees.

*Finding B2. The granting of such variance will not be detrimental to the public interest, safety, health or welfare, and will not be detrimental or injurious to the property or improvements in the same vicinity and zone(s) in which the property is located.*

The granting of the requested variance will allow for the construction of a new wash rack that will treat runoff prior to discharging wastewater into the ground. It is anticipated that the project will result in environmental benefits for the subject property as well as surrounding properties. The granting of the requested variance is expected to improve water quality, and is not expected to negatively impact the safety and welfare of the subject property owner as well as surrounding property owners.

The project was reviewed by the City Public Works Department, the City Biologist, and Planning Department staff. All recommendations of the various City departments will be incorporated into the project.

*Finding B3. The granting of the variance will not constitute a special privilege to the applicant or property owner.*

The granting of the variance will not constitute a special privilege to the applicants or property owners. Approval of the variance will grant relief from a technical development standard, which if strictly applied, would prevent the construction of a facility that will result in improved water quality standards. No alternate location for placement of the wash rack and dispersal field is available on this property due to sloping topography and existing development occupying the flattest portions of the site.

*Finding B4. The granting of such variance will not be contrary to or in conflict with the general purposes and intent of this Chapter, nor to the goals, objectives and policies of the Local Coastal Program.*

The granting of this variance will not be contrary to or in conflict with the general purposes and intent of the zoning provisions, nor to the goals, objectives and policies of the LCP. As previously stated, granting the requested variance will allow for the construction of a wash rack that will result in the improvement of the quality of the water that enters the ground through the dispersal field. Improved water quality is consistent with the policies and goals of the LCP.

*Finding B5. For variances to environmentally sensitive habitat area buffer standards or other environmentally sensitive habitat area protection standards, that there is no other feasible alternative for siting the structure and that the development does not exceed the limits on allowable development area set forth in Section 4.7 of the Malibu LIP.*

The variance is not related to ESHA buffer standards. However, it will allow for a portion of both the canopy and the dispersal field to be located within the drip line of two protected trees that are located



onsite. Currently, development exists within the drip lines of each tree and given the existing site conditions, it is not expected that approval of this variance will negatively impact the trees. The applicant will be required to monitor the health of the trees and should a tree need to be replaced as a result of the project, mitigation will be required.

*Finding B6. For variances to stringline standards, that the project provides maximum feasible protection to public access as required by LIP Chapter 12.*

The variance is not related to stringline standards. Therefore, this finding does not apply.

*Finding B7. The variance request is consistent with the purpose and intent of the zone(s) in which the site is located. A variance shall not be granted for a use or activity which is not otherwise expressly authorized by the zone regulation governing the parcel of property.*

The requested variance is for relief from a specific development standard and does not authorize a use not otherwise permitted in the Institutional zoning district. The proposed project is consistent with the purpose and intent of the Institutional zone in which the subject parcel is located.

*Finding B8. The subject site is physically suitable for the proposed variance.*

The subject site is currently developed as a maintenance yard and a wash rack, which currently exist onsite. The subject site is physically suitable for the proposed variance in that there is no alternate method or configuration which would eliminate the need for the variance request. As previously stated, the project has been reviewed and approved by the City Biologist and City Public Works Department. It is not expected that the construction of a new replacement wash rack will negatively impact the site.

*Finding B9. The variance complies with all requirements of state and local law.*

The variance complies with all requirements of state and local law. The project complies with all building code requirements and will incorporate all recommendations from applicable government agencies and consultants.

*Finding B10. A variance shall not be granted that would allow reduction or elimination of public parking for access to the beach, public trails or parklands.*

The variance is not related to the reduction or elimination of public parking. Therefore, this finding does not apply.

**C. Variance for the reduction of the existing side yard (12 feet proposed) (LIP Section 13.26.5)**

The applicant proposes a 12 foot side yard setback where the minimum side yard setback required is 35.2 feet. The reduced side yard setback is required for the construction of the canopy above the wash rack. The wash rack is an in-ground structure and can be approved for construction in the proposed location without a variance. However, the canopy is required to prevent the treatment system which services the wash rack from becoming flooded during a storm.



Pursuant to LIP Section 13.26.5, the Planning Commission may approve and/or modify an application for a variance in whole or in part, with or without conditions, provided that it makes ten findings of fact. Based on the evidence contained within the record, the Planning Commission approves VAR No. 14-015 as follows.

*Finding C1. There are special circumstances or exceptional characteristics applicable to the subject property, including size, shape, topography, location, or surroundings such that strict application of the zoning ordinance deprives such property of privileges enjoyed by other property in the vicinity and under the identical zoning classification.*

The proposed structure could be relocated to avoid encroachment into the required side yard setback. However, this alternative would require a massive amount of site disturbance. The proposed location for the wash rack places it in the location of the current wash rack. The reason why this location was chosen was because the site is currently developed with a lower and upper building pad. The upper pad is not large enough to accommodate trucks, a wash rack, and the associated water treatment infrastructure. If the wash rack was relocated on the lower pad, it could possibly require the demolition and reconstruction of the existing equipment building, oil house, or fuel pumps.

In addition, given the existing development onsite, no impacts to visual resources are expected with approval of the subject variance. Denial of the variance would deprive the property owner of privileges enjoyed by other properties in the vicinity that have development located within required yards.

*Finding C2. The granting of such variance will not be detrimental to the public interest, safety, health or welfare, and will not be detrimental or injurious to the property or improvements in the same vicinity and zone(s) in which the property is located.*

The granting of the requested variance will allow for the construction of a new wash rack that will treat runoff prior to discharging wastewater into the ground. It is anticipated that the project will result in environmental benefits for the subject property as well as surrounding properties. The granting of the requested variance is expected to improve water quality, and is not expected to negatively impact the safety and welfare of the subject property owner as well as surrounding property owners.

*Finding C3. The granting of the variance will not constitute a special privilege to the applicant or property owner.*

The granting of the variance will not constitute a special privilege to the applicants or property owners. Approval of the variance will grant relief from a technical development standard, which if strictly applied, would prevent the construction of a facility that will result in improved water quality standards. No alternate location for placement of the wash rack is available on this property due to sloping topography and existing development occupying the flattest portions of the site.

*Finding C4. The granting of such variance will not be contrary to or in conflict with the general purposes and intent of this Chapter, nor to the goals, objectives and policies of the Local Coastal Program.*



As previously stated, granting the requested variance will allow for the construction of a wash rack that will result in the improvement of the quality of the water that enters the ground through the dispersal field. Improved water quality is consistent with the policies and goals of the Local Coastal Program.

*Finding C5. For variances to environmentally sensitive habitat area buffer standards or other environmentally sensitive habitat area protection standards, that there is no other feasible alternative for siting the structure and that the development does not exceed the limits on allowable development area set forth in Section 4.7 of the Malibu LIP.*

The variance is not related to ESHA buffer standards. However, it will allow for a portion of the canopy to be located within the drip zone of a protected tree that is located onsite. Currently, the existing wash rack is located within the drip line of the same native tree and the reconstruction of the wash rack including the proposed canopy is not expected to negatively impact the tree. The applicant will be required to monitor the health of the tree and should the tree need to be replaced as a result of the project, mitigation will be required pursuant to the requirements of LIP Chapter 5.

*Finding C6. For variances to stringline standards, that the project provides maximum feasible protection to public access as required by LIP Chapter 12.*

The variance is not related to stringline standards. Therefore, this finding does not apply.

*Finding C7. The variance request is consistent with the purpose and intent of the zone(s) in which the site is located. A variance shall not be granted for a use or activity which is not otherwise expressly authorized by the zone regulation governing the parcel of property.*

The requested variance is for relief from a specific development standard and does not authorize a use not otherwise permitted in the Institutional zoning district. The proposed project is consistent with the purpose and intent of the Institutional zone in which the subject parcel is located.

*Finding C8. The subject site is physically suitable for the proposed variance.*

The subject site is currently developed as a maintenance yard and a wash rack currently exists onsite. The subject site is physically suitable for the proposed variance in that there is no alternate method or configuration which would eliminate the need for the variance request. It is not expected that the construction of a new replacement wash rack will negatively impact the site.

*Finding C9. The variance complies with all requirements of state and local law.*

The variance complies with all requirements of State and local law. The project complies with all building code requirements and will incorporate all recommendations from applicable City agencies and consultants.



*Finding C10. A variance shall not be granted that would allow reduction or elimination of public parking for access to the beach, public trails or parklands.*

The variance is not related to the reduction or elimination of public parking. Therefore, this finding does not apply

**D. Site Plan Review for Construction in Excess of 18 Feet in Height (LIP Section 13.27.5)**

LIP Section 13.27.5(A) requires that the City make four findings in the consideration and approval of a site plan review for construction in excess of the City's base 18 feet in height up to a maximum of 28 feet with a pitched roof. Two additional findings are required pursuant to Malibu Municipal Code Section 17.62.050. The applicant has proposed to construct a 24 foot high pitched roof canopy above the wash rack. Based on the evidence in the record, the findings of fact for SPR No. 12-047 are made as follows:

*Finding D1. The project is consistent with policies and provisions of the Malibu LCP.*

As discussed herein, the project has been reviewed for all relevant policies and provisions of the LCP. Based on submitted reports, visual impact analysis, and detailed site investigation, the project is consistent with all policies and provisions of the LCP.

*Finding D2. The project does not adversely affect neighborhood character.*

The project site is located along Las Flores Canyon Road and is surrounded by both single-family development and Institutional development that consists of both single and multi-story structures. Given the location of the existing development relative to the neighboring properties, the new canopy is not expected to be out of character with the surrounding development. Therefore, the project is not anticipated to adversely affect neighborhood character.

*Finding D3. The project provides maximum feasible protection to significant public views as required by Chapter 6 of the Malibu LIP.*

The project is not located along a scenic road and story poles were not installed because of the subject site's location relative to neighboring development. In addition, given the topography of the site, the proposed canopy cover will not block public views of the Santa Monica Mountains or its ridge lines or views of the Pacific Ocean. The proposed canopy cover is located on the lower of two existing building pads. Given the location of the project and the implementation of standard conditions of approval, the project is expected to have less than significant impacts to scenic vistas and provides the maximum feasible protection to significant public views as required by LIP Chapter 6.

*Finding D4. The proposed project complies with all applicable requirements of state and local law.*

The proposed project will comply with all applicable requirements of State and local law and is conditioned to comply with any relevant approvals, permits and licenses from the City of Malibu and other related agencies, such as Caltrans.



*Finding D5. The project is consistent with the City's general plan and local coastal program.*

As discussed previously in Finding A1, the proposed project is consistent with the LCP in that the proposed project is located in an area that has been identified for Institutional uses such as public works yards. The project will provide environmental benefits through the discharge of cleaner water which is a goal of both the General Plan and LCP. The proposed project is consistent with the LCP in that it conforms to the Institutional land use designation.

*Finding D6. The portion of the project that is in excess of 18 feet in height does not obstruct visually impressive scenes of the Pacific Ocean, off-shore islands, Santa Monica Mountains, canyons, valleys, or ravines from the main viewing area of any affected principal residence as defined in M.M.C. Section 17.40.040(A)(17).*

Based on the visual impact analysis (aerial photographs and site visits), it has been determined that the proposed development does not impact the primary view of neighboring properties. The residential properties behind the subject property are mostly undeveloped and located at a higher elevation that allows them to look over the site. Given the topography of the site, the project will not impact visually impressive views of the Santa Monica Mountains or the Pacific Ocean. A Notice of Application was posted on the property. To date, no comments from the public have been received regarding primary views.

#### **E. Environmentally Sensitive Habitat Area Overlay (LIP Chapter 4)**

As discussed previously in Section A of this document, riparian ESHA (Las Flores Creek) exists directly adjacent to the southern property line of the project site. However, the proposed development will be located on the previously approved and developed building pad. The new wash rack will be built in the location of existing wash rack and the associated tanks and dispersal field will be located under the existing driveway and parking lot. The equipment shed for the wash rack and the vacuum island will also be located in the developed building pad. The project was reviewed by both the City Biologist and the City's ERB. Neither expects the project to result in impacts to the neighboring riparian ESHA. Even though it does not appear that the findings contained in LIP Section 4.7.6(C) apply to the project, the supplemental ESHA findings can be made as follows.

*Finding E1. Application of the ESHA overlay ordinance would not allow construction of a residence on an undeveloped parcel.*

This finding does not apply because the property is currently developed and approval of the subject application will not result in an increase in the size of the existing building pad or result in development located closer to the neighboring riparian ESHA.

*Finding E2. The project is consistent with all provisions of the certified LCP with the exception of the ESHA overlay ordinance and it complies with the provisions of Section 4.7 of the Malibu LIP.*

As stated in Section A. General Coastal Development Permit, Finding A1, the proposed project is consistent with all provisions of Malibu's certified LCP, with the inclusion of the two variances and site plan review. As discussed throughout this resolution, approval of the subject application will not



result in development that will increase the size of the existing developed building pad, fuel modification, or locate development closer to the neighboring ESHA.

#### **F. Native Tree Protection (LIP Chapter 5)**

The subject application will result in development that will occur within the drip line of two native trees. There is a native Sycamore tree directly over the existing wash rack facility, and a portion of the proposed leach field for the water treatment system is located within the drip line of a Coastal Live Oak. Construction will take place within the drip line of each of these trees; however, it is not expected that trimming of major limbs of the existing trees will be required to allow for the proposed development. Based on the native tree report and review by both the City Biologist and the City's ERB, it is not expected that the project will result in impacts to the health of the existing trees. Nevertheless, a condition of approval has been added that requires the monitoring of the two trees. Should either tree's health decline, mitigation will be required pursuant to LIP Section 5.5. While no impacts are expected to the two native trees the required findings for LIP Chapter 5 are made as follows:

*Finding F1. The proposed project is sited and designed to minimize removal of or encroachment in the protected zone of native trees to the maximum extent feasible.*

A tree survey was prepared by the staff biologist for Caltrans that shows the perimeter of the drip lines of each native tree and its relation to the proposed development. The project does not propose the removal of any of the native trees. In addition, development already exists within the drip line of each tree. The project will not result in new or expanded encroachments into the drip lines of the two trees. Alternative projects were reviewed as part of the subject application; however, relocation of the proposed structures would result in greater disturbance to both the site and the existing native trees. Conditions of approval included in this resolution require the monitoring of the two native trees for five years by a qualified biologist.

*Finding F2. The adverse impact of tree removal and/or encroachment cannot be avoided because there is no other feasible alternative.*

As discussed in Finding F1, the existing site development encroaches within the protected zones of the existing native trees and as previously discussed in Finding A3, alternative projects were evaluated. Given that existing development already encroaches within the protected zones of the onsite native trees, there is no feasible alternative that would avoid encroachment.

*Finding F3. All feasible mitigation measures that would substantially lessen any significant impact on native trees have been incorporated into the approved project through design or conditions of approval.*

As discussed in Finding F1, the native tree protection requirements of LIP Chapter 5 require that development avoids encroachment into the drip line of native trees. The project is conditioned to provide monitoring of the health of the native trees in compliance with LIP Chapter 5 requirements.



#### **G. Scenic, Visual and Hillside Resource Protection (LIP Chapter 6)**

The Scenic, Visual and Hillside Resource Protection Chapter governs those CDP applications concerning any parcel of land that is located along, within, provides views to or is visible from any scenic area, scenic road, or public viewing area. The subject property is not visible from an LUP identified scenic area and as a result, LIP Chapter 6 does not apply to the proposed project.

#### **H. Transfer of Development Credit (LIP Chapter 7)**

According to LIP Section 7.2, transfer of development credits applies to land divisions and multi-family development in specified zones. The proposed project does not include a land division or multi-family development; therefore, the findings in LIP Chapter 7 do not apply.

#### **I. Hazards (LIP Chapter 9)**

Pursuant to LIP Section 9.3, written findings of fact, analysis and conclusions addressing geologic, flood and fire hazards, structural integrity, or other potential hazards must be included in support of all approvals, denials or conditional approvals of development located in or near an area subject to these hazards. Based on review of the proposed development, the findings in LIP Chapter 9 do not apply.

#### **J. Shoreline and Bluff Development (LIP Chapter 10)**

LIP Chapter 10 applies to land that is located on or along the shoreline, a coastal bluff or bluff top fronting the shoreline. The proposed project is not located near the shore. Therefore, LIP Chapter 10 does not apply.

#### **K. Public Access (LIP Chapter 12)**

LIP Chapter 12 requires public access for lateral, bluff-top, and vertical access near the ocean, trails, and recreational access. The subject parcel is not located along the shore on a bluff top. No planned or developed trails, parkland, or offer to dedicate trail easements exist on or adjacent to the subject parcel as indicated on the 2002 LCP Park Lands Map and City's March 2004 Trails System Map. Therefore, LIP Chapter 12 does not apply.

#### **L. Land Division (LIP Chapter 15)**

The project does not include a land division. Therefore, LIP Chapter 15 does not apply.

#### **Section 4. Planning Commission Action.**

Based on the foregoing findings and evidence contained within the record, the Planning Commission hereby approves Coastal Development Permit No. 12-068, Variance Nos. 14-014 and 14-015 and Site Plan Review No. 12-047, subject to the following conditions.



Section 5. Conditions of Approval.

1. The property owners, and their successors in interest, shall indemnify and defend the City of Malibu and its officers, employees and agents from and against all liability and costs relating to the City's actions concerning this project, including (without limitation) any award of litigation expenses in favor of any person or entity who seeks to challenge the validity of any of the City's actions or decisions in connection with this project. The City shall have the sole right to choose its counsel and property owners shall reimburse the City's expenses incurred in its defense of any lawsuit challenging the City's actions concerning this project.
2. Approval of this application is to allow for the following:
  - a. New illuminated wash rack
  - b. 1,254 square foot, 24 foot tall steel canopy that is supported by six steel columns
  - c. 2,000 gallon oil and sand separator tank
  - d. 5,000 gallon clarifier tank
  - e. Leach field.
  - f. 48 square foot equipment shed
  - g. Emergency eye wash station
  - h. Sanitary dump station
  - i. Vacuum station for the trucks
3. Subsequent submittals for this project shall be in substantial compliance with plans on-file with the Planning Department, date-stamped **February 6, 2014**. In the event the project plans conflict with any condition of approval, the condition shall take precedence.
4. Pursuant to LIP Section 13.18.2, this permit and rights conferred in this approval shall not be effective until the property owner signs and returns the Acceptance of Conditions Affidavit accepting the conditions set forth herein. The applicant shall file this form with the Planning Department within 10 days of this decision and prior to issuance of any development permits.
5. The applicant shall submit three (3) complete sets of plans to the Planning Department for consistency review and approval prior to the issuance of any building or development permits.
6. This resolution, signed Acceptance of Conditions Affidavit and all Department Review Sheets, attached to the agenda report for this project, shall be copied in their entirety and placed directly onto a separate plan sheet behind the cover sheet of the development plans submitted to the City of Malibu Environmental Sustainability Department for plan check.
7. This CDP shall be null and void if the project has not commenced within three (3) years after issuance of the permit, unless a time extension has been granted, or work has commenced and substantial progress has been made (as determined by the Building Official) and the work is continuing under a valid building permit. If no building permit is required, the CDP approval shall expire after three years from the date of final planning approval if construction is not completed. Extension of the permit may be granted by the approving authority for due cause. Extensions shall be requested in writing by the applicant or authorized agent prior to expiration of the three-year period and shall set forth the reasons for the request.



8. Any questions of intent or interpretation of any condition of approval will be resolved by the Planning Director upon written request of such interpretation.
9. Minor changes to the approved plans or the conditions of approval may be approved by the Planning Director, provided such changes achieve substantially the same results and the project is still in compliance with the M.M.C. and the LCP. Revised plans reflecting the minor changes and additional fees shall be required.
10. Pursuant to LIP Section 13.20, development pursuant to an approved CDP shall not commence until the CDP is effective. The CDP is not effective until all appeals have been exhausted.

#### ***Cultural Resources***

11. In the event that potentially important cultural resources are found in the course of construction, work shall immediately cease until a qualified archaeologist can provide an evaluation of the nature and significance of the resources and until the Planning Director can review this information. Thereafter, the procedures contained in LIP Chapter 11 and those in M.M.C. Section 17.54.040(D)(4)(b) shall be followed.
12. If human bone is discovered during construction, work shall immediately cease and the procedures described in Section 7050.5 of the California Health and Safety Code shall be followed. Section 7050.5 requires notification of the coroner. If the coroner determines that the remains are those of a Native American, the applicant shall notify the Native American Heritage Commission by phone within 24 hours. Following notification of the Native American Heritage Commission, the procedures described in Section 5097.94 and Section 5097.98 of the California Public Resources Code shall be followed.

#### ***Grading/Drainage/Hydrology***

13. A Storm Water Pollution Prevention Plan (SWPPP) shall be developed. This plan shall include:
  - a. Dust Control Plan for the management of fugitive dust during extended periods without rain;
  - b. Designated areas for the storage of construction materials that do not disrupt drainage patterns or subject the material to erosion by site runoff;
  - c. Designated areas for the construction portable toilets that separates them from storm water runoff and limits the potential for upset; and
  - d. Designated areas for disposal and recycling facilities for solid waste separated from the site drainage system to prevent the discharge of runoff through the waste.



### ***Biology/Landscaping/ERB***

14. An annual native tree monitoring report shall be submitted for review by the City Biologist each year for five years. Should any of the native trees be lost or suffer worsened health or vigor as a result of the proposed development, the applicant shall mitigate the impacts as required in section 5.5 of the Malibu LIP. If replacement plantings are required as mitigation an additional 5 years of monitoring will be required for the replacement trees.
15. Nesting bird surveys by a qualified biologist prior to initiation of construction is required. Surveys shall be completed no more than 5 days from proposed initiation of site preparation activities. Should active nests be identified, a buffer area no less than 150 feet (300 feet for raptors) shall be fenced off until it is determined by a qualified biologist that the nest is no longer active.

### ***Site Specific Conditions***

16. Any construction trailer, storage equipment or similar temporary equipment not permitted as part of the approved scope of work shall be removed prior to final inspection.
17. Upon completion of the project the applicant shall request a final inspection from the project planner.
18. All light fixtures must be down facing and no light shall be cast offsite.
19. The Storm Water Pollution Plan shall prohibit the use of soaps that contain nitrates or phosphates on equipment cleaned in the wash rack area.

### **Fixed Conditions**

20. This coastal development permit shall run with the land and bind all future owners of the property.
21. Violation of any of the conditions of this approval may be cause for revocation of this permit and termination of all rights granted there under.



Section 6.      Certification.

The Planning Commission shall certify the adoption of this Resolution.

PASSED, APPROVED AND ADOPTED this 4<sup>th</sup> day of August 2014.

  
MIKKE PIERSON, Planning Commission Chair

ATTEST:

  
PATRICIA SALAZAR, Recording Secretary

LOCAL APPEAL - Pursuant to Local Coastal Program Local Implementation Plan (LIP) Section 13.20.1 (Local Appeals) a decision made by the Planning Commission may be appealed to the City Council by an aggrieved person by written statement setting forth the grounds for appeal. An appeal shall be filed with the City Clerk within 10 days and shall be accompanied by an appeal form and filing fee, as specified by the City Council. Appeal forms may be found online at [www.malibucity.org](http://www.malibucity.org), in person at City Hall, or by calling (310) 456-2489, ext. 245.

COASTAL COMMISSION APPEAL - An aggrieved person may appeal the Planning Commission's decision to the Coastal Commission within 10 working days of the issuance of the City's Notice of Final Action. Appeal forms may be found online at [www.coastal.ca.gov](http://www.coastal.ca.gov) or in person at the Coastal Commission South Central Coast District office located at 89 South California Street in Ventura, or by calling (805) 585-1800. Such an appeal must be filed with the Coastal Commission, not the City.

I CERTIFY THAT THE FOREGOING RESOLUTION NO. 14-78 was passed and adopted by the Planning Commission of the City of Malibu at the regular meeting thereof held on the 4th day of August, 2014, by the following vote:

AYES:	4	Commissioners: Pierson, Brotman, Jennings, Mazza and Stack
NOES:	0	
ABSTAIN:	0	
ABSENT:	1	Commissioner Stack

  
PATRICIA SALAZAR, Recording Secretary



### ACCEPTANCE OF CONDITIONS AFFIDAVIT

The undersigned permittees or authorized agent(s) acknowledges receipt of the City of Malibu Planning Commission's decision of approval and agrees to abide by all terms and conditions thereof City of Malibu Planning Commission Resolution 14-78 (3503 Las Flores Canyon Road, Common Area) adopted on August 4, 2014 attached hereto. The permit and rights conferred in this approval shall not be effective until the property owner signs, notarizes and files this affidavit accepting the conditions with the City of Malibu Planning Department within 10 working days of the Planning Commission's decision.

9/18/14  
Date

[Signature]  
Signature of Permittee or Authorized Agent

Garrett Kai Damrath  
Print Permittee or Authorized Agent Name

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Permittee or Authorized Agent

\_\_\_\_\_  
Print Permittee or Authorized Agent Name

### ALL PURPOSE ACKNOWLEDGMENT

STATE OF CALIFORNIA  
County of Los Angeles

On 9/18/14 before me Pamela A Kay  
(insert name and title of the officer)

personally appeared Garrett Kai Damrath

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Pamela A Kay  
(Notary Public's signature in and for said County and State)

(Seal)





## Memorandum

*Flex your power!  
Be energy efficient!*

**To:** MS. RANIA WASSILY, PROJECT ENGINEER  
District 7 Division of Maintenance Design

**Date:** August 22, 2012  
**File:** 07-LA-L5718

**From:** DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING SERVICES  
Geotechnical Services  
Office of Geotechnical Design – South 1  
Branch C

07-1W5101 (0712000296)  
3503 Las Flores Canyon Rd.  
Las Flores Maintenance Station

**Subject:** Geotechnical Design Report for Las Flores Maintenance Station

### INTRODUCTION

As requested by your office in an e-mail dated May 22, 2012, The Office of Geotechnical Design-South 1 has prepared this Memorandum to present Geotechnical Design Report including Percolation Test results for the Las Flores Maintenance Station located at 3503 Las Flores Canyon Road, Malibu, California. We have received your comments on our Draft report and we are submitting this as the final report.

### PROJECT DESCRIPTION

The existing Las Flores Maintenance Station was reconstructed in the late 1990's after a fire destroyed the Maintenance Station. Sometime after the reconstruction and after subsequent work to install improvements it was determined that the existing on-site wastewater treatment system for the existing wash rack needed to be modified. This project proposes improvements consisting of enlarging the existing wash rack, adding a canopy over the wash rack, adding a secondary clarifier, and adding a new leachfield where none had existed before.

### SCOPE OF WORK

The following tasks were performed for preparing the geotechnical design report:

- Review of the pertinent reports, published documents, plans and as-built plans
- Field reconnaissance by OGDS1 geotechnical staff to observe the existing conditions at the maintenance station
- Project coordination with Underground Service Alert, Caltrans Maintenance, Caltrans Drilling Services, Caltrans Geotechnical Support and District 7 Office of Environmental Engineering and Corridor Studies
- Field exploration and laboratory testing
- Interpretation of subsurface soil and groundwater conditions at the site



## FIELD INVESTIGATIONS AND DOCUMENT REVIEW

For this project a field investigation consisting of hollow stem auger borings, trenching and percolation testing was performed in the areas of the proposed leachfield, clarifier, and wash rack from June 25 to June 29, 2012. During the investigation, six exploratory borings and three backhoe trenches were conducted in acceptable proximity to the proposed improvements.

During the exploratory borings, Standard Penetration Tests (SPTs) were performed. The SPTs were performed in accordance with ASTM Test Method D1586 using a standard 1.4 inch sampler with a 140 pound hammer dropped 30 inches. Groundwater was measured in the borings prior to backfilling the boring to identify the static water table elevation. The information from the field exploration is summarized in Table 1. Once the subsurface profile was determined by the borings the three backhoe trenches were excavated in the proposed leachfield location and soil profile was visually verified again and the percolation tests were conducted in the three trenches. Percolation tests were conducted by the Office of Geotechnical Support and the Percolation Test is attached as Appendix 1 of this report.

In addition to the above field investigation and testing, the following documents were reviewed for preparation of the recommendations:

- As-built plans for Las Flores Maintenance Station, December 1996.
- Proposed plans for improvements Project 07-1W5101.

**Table 1 – Summary of Subsurface Exploration**

Borehole ID	Date Drilled	Total Depth (ft)	Surface Elevation (ft)	Northing	Easting	Remarks
A-12-001	06/26/2012	20.7	138.35	1839388.297	6368110.540	Trench 1
A-12-002	06/26/2012	21.5	137.90	1839366.347	6368105.681	Trench 2
A-12-003	06/26/2012	6.3	137.82	1839344.427	6368116.182	Trench 3
A-12-004	06/27/2012	21.0	138.14	1839326.138	6368078.848	Clarifier
A-12-005	06/27/2012	20.2	136.43	1839274.900	6368081.743	Wash rack
A-12-006	06/26/2012	20.5	137.66	1839343.012	6368106.854	Trench 1

Boring Records for the recent field investigation are included as Appendix 2 of this report.



## **LABORATORY TESTING**

Selected samples taken during the field investigation were tested at Caltrans Southern Regional Laboratory in order to obtain or derive relevant physical soil properties. The following laboratory tests were conducted to supplement the observations recorded during the field investigation:

- Minimum Resistivity, pH

The laboratory tests were conducted in general accordance with California Test Methods or American Society for Testing and Material (ASTM) Standards.

## **GEOLOGY AND SUBSURFACE CONDITIONS**

### **Site Geology**

The project site is underlain by recent Holocene age alluvium. This alluvium is mapped as gravel and sand of major stream channels (Dibblee, 1993) to underlie the maintenance yard site. The alluvium found during the June 2012 investigation at the project site consists predominantly of medium dense to very dense sand with gravel. Directly below the alluvium bedrock was encountered. The bedrock has been mapped as volcanic breccias of the Conejo Formation and consists of a weathered matrix of volcanic materials surrounding larger volcanic blocks of less weathered volcanic material that can be hard to very hard. The blocks can be boulder sized material from 12 inches to several feet in diameter. The bedrock elevation varies from 117.9 to 120.2 feet elevation near (18.0 to 21.5 feet in depth below) the proposed leachfield and was encountered at approximate elevation 124.0 feet near (14 feet deep below) the proposed clarifier and bedrock was encountered at approximate elevation 126.0 near (10 feet deep below) the wash rack. The closest fault to the site is the Las Flores Thrust Fault oriented as a low angle north dipping thrust fault located directly under the site (Dibblee, 1993) however it is not considered an active fault. The closest active fault is the Malibu Coast Fault oriented as a left lateral strike slip fault which is located 1.0 miles southwest of the site.



## Groundwater

Groundwater was measured during this investigation in five of the six borings completed in June 2012. Groundwater elevation ranges from elevation 121.73 toward the south end near the wash rack to elevation 126.5 near the north end of the proposed leachfield. Groundwater is approximately 11.5 feet below the ground surface near the proposed leachfield area and approximately 15 feet below the ground surface near the proposed clarifier and the wash rack. The measurements of groundwater table are summarized in Table 2.

**Table 2 – Measurement of Groundwater Table**

Borehole ID	Date Drilled and measured	Surface Elevation (ft)	Groundwater Depth (ft)	Groundwater Elev (ft)	Remarks
A-12-001	06/26/2012	138.35	11.8	126.55	North end of leachfield
A-12-002	06/26/2012	137.90	11.4	126.5	Middle of proposed leachfield
A-12-004	06/27/2012	138.14	15.3	122.84	clarifier
A-12-005	06/27/2012	136.43	14.7	121.73	wash rack
A-12-006	06/26/2012	137.66	11.8	125.86	South end proposed leachfield

No groundwater was encountered in A-12-003 as the boring was terminated above the elevation of anticipated groundwater. For geotechnical analysis, the design groundwater table is assumed to be at an elevation of 127.0 feet under the consideration of the highest groundwater table in the above measurements.

## CORROSION EVALUATION

Selected samples were tested at Caltrans Southern Regional Laboratory in order to obtain corrosivity parameters including pH and resistivity. Based on the results of the PH test the sulfate and chloride content tests were not necessary. Corrosion test from one boring (A-12-005) conducted near the proposed foundation of the wash rack were used for evaluating corrosivity at this site. The results are summarized in Table 3.

**Table 3 – Summary of Corrosion Test Results**

Borehole ID	Depth (ft)	pH	Minimum Resistivity (ohm-cm)	Sulfate Content (ppm)	Chloride Content (ppm)
A-12-005	0.0 – 10.0 (combined)	8.1	3700	N/A	N/A

Notes: N/A = Not applicable



Caltrans currently considers a site to be corrosive to foundation elements if one or more of the following conditions exist: Chloride concentration is greater than or equal to 500 ppm, sulfate concentration is greater than or equal to 2000 ppm, or the pH is 5.5 or less. Based on the results of corrosion tests, the site is considered non-corrosive to foundation elements.

## SEISMIC RECOMMENDATIONS

### Faulting and Seismicity

The Malibu Coast Fault is the nearest known seismic source for this site. This fault is a left lateral strike slip fault dipping 75 degrees to the north. The closest distance from the site to the active portion of the fault trace is 1.0 miles. Caltrans ARS Online was used to obtain some of the fault information for the nearest seismic sources provided in Table 4.

**Table 4 – Fault Information**

Fault Name	Type	M <sub>max</sub>	Dip direction (Dip angle)	R <sub>X</sub>	R <sub>JB</sub>	R <sub>RUP</sub>
Malibu Coast Fault	LLSS	6.7	North (75 degrees)	0.57 mile	0.95 mile	0.55 mile
Santa Monica Fault	R	6.6	North (50 degrees)	2.5 mile	0.0 mile	1.9 mile

Notes: R<sub>X</sub> = Horizontal distance to the fault trace  
R<sub>JB</sub> = Shortest horizontal distance to the surface projection of the rupture area  
R<sub>RUP</sub> = Closest distance to the fault rupture plane

The design ARS curve is an envelope of deterministic and probabilistic acceleration response spectrum curve. The probabilistic ARS curve was developed with a ground motion return period of 975 year which is corresponding with 5% probability of exceedance in 50 years and the Next Generation Attenuation (NGA) was used for the deterministic ARS curve. The design Peak Ground Acceleration (PGA) has been evaluated as 0.60g from the design ARS curve.

### Surface Fault Rupture Hazard Evaluation

The site is not located within any California Geological Survey Alquist Priolo Earthquake Fault Zone (EFZ). Therefore, the site is not considered prone to surface fault rupture hazard and the possibility of surface fault rupture hazard at the site is considered low.

### Liquefaction Potential

Liquefaction is a phenomenon in which saturated, loose to medium dense sand and silt behave like a fluid when subjected to high intensity ground shaking. Liquefaction occurs when three general conditions exist: (1) shallow ground water (2) low-density, fine, sandy and/or silty soils and (3) high-intensity ground motion. The primary effect of liquefaction include sand boils, settlement



and settlement-related downdrag to piles, lateral spreading and flow slides in the areas with sloping ground.

Based on the results of the borings conducted for this investigation, the site has a low to moderate potential for liquefaction. This is based on the fact that medium dense to dense and very dense sand with gravel was found below the groundwater, the medium dense sand with gravel having a moderate to low potential and the dense to very dense sand with gravel having a low to non-existent potential for liquefaction.

#### **AS-BUILT FOUNDATION DATA**

No as-built information regarding the foundations of the existing maintenance buildings and improvements were provided or reviewed as part of this investigation. The only as-builts that were reviewed were utility plans and general layout plans showing existing improvement locations. The types of existing footings for the buildings and improvements are not known by our office.

#### **PERCOLATION TESTING DISCUSSION**

Three percolation tests were conducted in three separate backhoe trenches (T-1, T-2, T-3) excavated on June 26, 2012. The three trenches were excavated to 2.5 feet below the driveway surface and this is where the percolation 1-foot deep and 1-foot square holes were excavated. Percolation test locations and elevations are shown in Table 5. Percolation rates were determined for T-1 and T-2 and are presented in Appendix 1. The percolation test for T-3 failed.

**Table 5 – Percolation Test Locations and Elevations**

Trench No.	Trench Depth	Surface Elevation	Bottom Trench Elevation	Bottom Perc. Test Elevation	Northing and Easting of both ends of Trench
T-1	2.5 feet	138.3	135.8	134.8	N1839386.703, E6368111.907 N1839385.369, E6368102.166
T-2	2.5 feet	138.0	135.5	134.5	N1839365.075, E6368115.527 N1839363.922, E6368104.654
T-3	2.5 feet	137.7	135.2	134.2	N1839343.094, E6368117.024 N1839341.166, E6368105.918

#### **GEOTECHNICAL RECOMMENDATIONS AND CONSTRUCTION CONSIDERATIONS**

1. Dewatering might be necessary for the excavation of footings since groundwater fluctuates over time and shallow perched water may be present at the site.
2. Bedrock may be encountered during excavation of footings for wash rack canopy and excavation for the clarifier. The material encountered may be locally hard to very hard and may



Ms. Rania Wassily  
August 22, 2012  
Page 7

Las Flores Maintenance Station  
07-1W5101 (0712000296)

- require pneumatic hammer to excavate in the base of the deeper excavations (greater than 6 feet below ground surface in the area of the clarifier and wash rack).
3. The percolation test at the south end of the proposed leachfield failed. The layout of the leachfield may need to be changed to be wider or shortened to the south and lengthened to the north.
  4. The sand with gravel and bedrock encountered at the site should be suitable for construction of spread footing type foundations for the wash rack canopy. Due to the granular nature of the soils settlement (if any) should be immediate. Since no design loads were provided at this stage of the project we can't give specific recommendations for the size of the spread footings at this time. Please contact our office for final design details once the general footing details have been prepared and the loads have been finalized and we will provide foundation recommendations. If there is not room for spread footings alternatively cast in drilled hole pile foundations also may be feasible at this site.

If you have any questions or comments, please feel free to contact Christopher Harris at 213-620-2147 or Chi-Tseng (Ted) Liu at 213-620-2136.

Prepared by:

Date: 07/31/2012

Reviewed by:

Date: 07/31/2012



Christopher Harris, P.G., C.E.G.  
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Branch C



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Senior Transportation Engineer  
Office of Geotechnical Design – South 1  
Branch C



c: DES Water and Waste Water Branch –Kosha\_Shah@dot.ca.gov



### References

California Geologic Survey, "Earthquake Fault Zones Malibu Beach Quadrangle", August 2007.

Caltrans, "ARS Online Version 1.0.4", 2009.

Dibblee, T.W., "Geologic Map of the Malibu Beach Quadrangle Los Angeles County, California", 1993.



## Appendix 1

### Percolation Test Report



# Soil Percolation Test Report

## ■ Project Information

Name: Las Flores Maintenance Station Washrack

DST/CO/RTE/PM: 07-LA-001-44.5

Project Code: 0712000296

Test Site: Proposed Leach field at Las Flores M.S. at 3503 Las Flores Canyon Rd, Malibu, CA 90265

Percolation test date: 6/26/2012 ~ 6/28/2012

## ■ Test Purpose

The purpose to perform several soil percolation tests at the proposed leach field site at Las Flores Maintenance Station is to measure the rate at which water will infiltrate or seep into a soil stratum under conditions defined in the project percolation test procedure. The percolation test results may be used to determine the feasibility of onsite soils for wastewater disposal and for the sizing of infiltrative disposal area.

## ■ Test Procedure

The project which requires the percolation tests is a type of leach field. Based on this type of dispersal system, we follow the "Procedures for Percolation Testing of Leach Line and Leach Bed Dispersal Systems", defined in *A PROFESSIONAL GUIDE TO REQUIREMENTS AND PROCEDURES FOR ONSITE WASTEWATER TREATMENT SYSTEMS (OWTS)*, published by Department of Public Health, Los Angeles County and effective on January 1, 2012. See appendix A.

## ■ Percolation Testing

- a. Location of percolation test holes: Three percolation testing trenches are determined by the geotechnical design engineer on the proposed leach field location. These trenches are used for the determination of soil profile and elevation of the percolation test. In each trench, one percolation hole is constructed based on requirement of the percolation test procedure. All percolation tests were performed at the trench bottom. The three test holes are designated as T-1, T-2 and T-3. See appendix B.
- b. Excavation for the test hole: Three trenches were excavated for the test holes. A cubic foot hole (1' x 1' x 1') was constructed at the trench bottom in each trench. The test



hole was prepared using 12-in auger to do the pre-drilling, then used the hand tool to dig and form a 1' x 1' x 1' test pit.

- c. **Presoaking of the test hole:** After three test holes were constructed, they were thoroughly presoaked 24 hours prior to percolation test. One of the test holes, T-3, was considered as failed as water was still found almost in full of the hole after 24 hours of the presoak.
- d. **Percolation test:** The percolation tests were conducted during 6/26/12 to 6/28/12. The tests were conducted at the test holes T-1 and T-2. The test hole was completely filled with water again after a successful presoak and allowed adequate time for the water level to drop. As the water level dropped, the time elapsed for each one inch of the drop was recorded. A yardstick with scale was used for helping to determine the level of the water in the hole. A stopwatch was also used for determine the time elapsed for each inch of water drop.

#### ▪ **Summary of Test Result**

The soil percolation tests are summarized in the following table. For test 1, it took about 149 minutes for water dropped 12 inches and completed the test. For test 2, it took about 235 minutes for water dropped 12 inches and completed the test. The water infiltrated into soil was much slower in test hole two. Test 3 was considered failed based on the criteria in Section C of the test procedure.

Water Drop (inch)	Elapsed Time (min:sec)		
	Perc Test 1 (T1)	Perc Test 2 (T2)	Perc test 3 (T3)
0" – 1"	0:19	9:00	It was failed for the water was found in the test pit after having presoaked 24 hours.
1" – 2"	3:04	11:00	
2" – 3"	6:09	14:00	
3" – 4"	9:33	16:00	
4" – 5"	12:52	16:00	
5" – 6"	11:57	20:00	
6" – 7"	12:48	27:00	
7" – 8"	15:32	29:00	
8" – 9"	14:43	24:00	
9" – 10"	22:36	37:00	
10" – 11"	23:54	24:00	
11" – 12"	14:22	8:00	

Based on the test procedure, Section E, "the size of the disposal field shall be determined by the amount of time required for the water to drop from the 5<sup>th</sup> to 6<sup>th</sup> inch. The slowest acceptable elapsed time recorded on the property shall be used as the representative of the percolation rate for the area being tested and utilized in the Ryon Formula calculation."

$$\text{Ryon Formula: } A = [(T + 62.4)/29] \times (C/2)$$

Where A = Square feet of 3-foot wide trench disposal area

T = Time in minutes for the 6<sup>th</sup> inch of water to drain

C = Proposed septic tank capacity

Through the percolation testing, we can provide the value of parameter "T" in the formula. From table above, it can be seen that the elapsed time for water to drop the 5"-6" inch at Perc Test 1 is about 12 minutes while it is about 20 minutes at Perc Test 2. The slower acceptable elapsed time 20 minutes can be used as the value of parameter "T" in Ryon Formula. Both percolation tests meet the requirements in Note 9 of the procedure and the absorption rates are within the range from 5 Minutes per Inch (MPI) to 60 Minutes per Inch (MPI) for the water level to drop from the 5<sup>th</sup> and 6<sup>th</sup> inch.

▪ **Appendix**

**A - Percolation Test Procedure of Los Angeles County.**

**B - Test Pit Location Map (sketch).**

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Prepared By:

Zhanqi Yu, Geotechnical Instrumentation Branch, Geotechnical Services Division

Date: 8/2/12

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LOS ANGELES COUNTY • DEPARTMENT OF PUBLIC HEALTH  
ENVIRONMENTAL HEALTH  
Bureau of Environmental Protection  
Land Use Program  
5050 Commerce Drive, Baldwin Park, CA 91706  
Phone (626) 430-5380 • Fax (626) 813-3016  
[www.publichealth.lacounty.gov](http://www.publichealth.lacounty.gov)



APPENDIX A

**A PROFESSIONAL GUIDE TO  
REQUIREMENTS AND PROCEDURES FOR  
ONSITE WASTEWATER TREATMENT SYSTEMS (OWTS)**

**January 1, 2012**

These Requirements and Procedures shall apply to feasibility reports submitted on or after January 1, 2012. Previously submitted feasibility reports, all or in part, that have lapsed more than 1 year from the original date of submittal shall be subject to a review in accordance with these guidelines.

This document is a summary of requirements derived from laws applicable to OWTS. They are intended to provide standardized guidelines for preparation and submittal of feasibility reports to obtain the Department of Public Health - Environmental Health (the Department) approval for construction and installation of OWTS. This document is prepared in accordance with the requirements set forth in Los Angeles County Code, Titles 11 and 28, and is subject to amendment as deemed necessary by the Department. The Department will make every effort to notify the related industry and all interested parties of any revisions to these guidelines 30 days prior to the effective date of the implementation. This document does not represent all applicable regulations in their entirety; other requirements may apply.

All OWTS approvals for projects other than single family dwellings, such as, institutions, commercial establishments and multifamily dwellings developments shall be in concurrence with the California Regional Water Quality Control Board (RWQCB). The developers are advised to consult with the appropriate field office of the RWQCB prior to contacting the Department. Applicants may be required to obtain Waste Discharge Requirement (WDR) permit from RWQCB for such projects.

Should questions arise regarding these procedures or requirements, please contact your Environmental Health Representative:

\_\_\_\_\_, REHS Telephone: \_\_\_\_\_  
Registered Environmental Health Specialist

Further inquiry or appeal of decisions may be made to:  
Patrick Nejadian, Chief Environmental Health Specialist at (626) 430-5380 or  
[pnejadian@ph.lacounty.gov](mailto:pnejadian@ph.lacounty.gov)



### **Procedures for Percolation Testing of Leach Line and Leach Bed Dispersal Systems:**

- A. Prior to performing percolation tests, a determination of the topography and plumbing hydraulic grade shall be made to appropriately determine the level of the dispersal field. All percolation tests shall be performed at the depth where the floor of the trenches are planned to be installed; so that the top of the cubic test holes shall be at the same level as the anticipated bottom of the trench.
- B. An excavation shall be made at least 10 feet below the calculated depth of the trenches to provide a soil profile. Based on this information, the size of the system may be estimated and a determination made concerning a representative number of test holes.
- C. Excavation for the test holes shall be made at the same depth as the proposed depth for the leach lines or leach bed. These test holes shall be at least 3 feet square and dug to the depth of not less than 2.5 feet. A 1 cubic foot hole (1' x 1' x 1') shall be provided at the bottom.
- D. The 1 cubic foot holes shall be thoroughly presoaked 24 hours prior to percolation test. If water is found in any test holes after 24 hours of the presoak, the test holes are considered failed.
- E. At or before 24 hours later, after a successful presoak, the test holes shall be completely filled with water again and allowed adequate time for the water level to drop. As the water level drops, each one inch of drop shall be recorded. The size of the dispersal field shall be determined by the amount of time required for the water to drop from the 5<sup>th</sup> to the 6<sup>th</sup> inch. The slowest acceptable elapsed time recorded on the property shall be used as the representative of the percolation rate for the area being tested and utilized in the Ryon Formula calculation.

$$\text{Ryon Formula: } A = \frac{T + 6.24}{29} \times \frac{C}{2}$$

Where A = Square feet of 3-foot wide trench dispersal area  
T = Time in minutes for the 6<sup>th</sup> inch of water to drain  
C = Proposed septic tank capacity

The resulting "A" must be divided by 3 to arrive at the length of a 3 foot wide trench with 1 foot of filter material below the perforated pipe provided for the dispersal system. For trenches proposing 2 feet of filter material below the pipe, "A" must be divided by 5 to arrive at the length of trench. For trenches proposing 3 feet of filter material below the pipe, "A" must be divided by 7.

#### **Notes:**

1. Gravel, stone, slag and similar materials used for filtration purposes shall be thoroughly washed to be free of fines.
2. A single leach line shall not exceed 100 feet in length.
3. Dispersal field shall be installed at the shallowest practicable depth to maximize elements critical to treatment of effluent in the soil. Elements critical to treatment of effluent include oxygen transfer, biological treatment, and evaporation and uptake of nutrients by vegetation (evapotranspiration).
4. The total depth for a trench or bed, from ground level to the bottom of trench/bed, may not exceed 5 feet. The total depth of fill over leach lines to ground level, to include the gravel over the pipe, shall not exceed 24 inches. A depth of 12 to 18 inches of earthen cover is required over leach lines.



Deep trenches will provide effective wastewater dispersal, but not necessarily effective treatment of the wastewater, as there will be limited biological activities due to lack of oxygenation to support degradation of particles at greater depth.

Where due to day-lighting concerns on steep slopes or other extreme circumstances that may exist on a property, or when it necessitates due to poor soil conditions or an impervious layer that restricts the downward movement of the wastewater, the total depth for trench or bed may be allowed to be greater than 5 feet. The QP shall address the need for greater depth. When the total depth of fill and the depth from ground to the bottom of trenches are allowed to be greater than 5 feet, the entire column of the trench shall be back filled with gravel to the height where the earthen cover starts (12 to 18 inches below the ground level). Except for hillside properties where slope is 2:1 or steeper, the trench spaces above leach lines installed deeper than 5 feet will not be required to be backfilled with gravel.

Installation of dispersal fields (leach lines/beds and subsurface drip system) on slopes greater than 2:1 require approval from Geological and Materials Engineering Division (GMED) of DPW to ensure the installation will not cause instability in the area and the integrity of the slope will not be compromised.

5. On sloping grounds, to compensate for excessive line slope, leach lines and leach beds shall be stepped. The lines between each horizontal section shall be made with watertight joints and shall be designed so each horizontal dispersal trench or bed shall be utilized to the maximum capacity before the effluent shall pass to the next lower leach line or bed. A California Certified Engineering Geologist or a California Registered professional soil/Geotechnical Engineer shall address any possible potential for slope destabilization for any proposed hillside installation.

6. The dispersal field/area may not be covered or paved over and in no case may a vehicle be driven or placed over the dispersal field/area.

In situations where due to insufficient land or other extenuating circumstances, after it has been demonstrated to the satisfaction of the Department that there are no other alternative, the dispersal field/area may be allowed to be paved or driven over. However, the dispersal system shall be either equipped with supplemental treatment component, or be comprised of approved type infiltrators that are traffic rated or installed in that manner. The infiltrators shall be equipped with air vents with a minimum of 2 inches in diameter, one on each end, that are installed at the same proximity of each end. The vent openings shall be designed and installed in a manner to prevent moisture intrusion into infiltrators. The vents stacks shall extend to a height required by Building and Safety Division and secured to a permanently installed structure(s) to remain upright at all times and be protected from accidental damage or being covered. The Department may require carbon filters and blowers in conjunction with the air vents to enhance aeration.

The applicant is required to demonstrate, by means of adequate tests or otherwise, that the placement of the leach field in the driveway is the only viable and practical alternative. The location of the leach field in a driveway will be reviewed and approved on a case by case basis.

7. For the computation of leach bed size, the size of the bed shall be at least 50% greater than the required area for leach lines.
8. No excavation for a leach line or leach bed shall extend within 10 feet of the ground/subsurface water. When deemed feasible, the Department may permit ground to be built up by engineering/manufactured soil to a maximum of 3 feet in depth to provide sufficient vertical setback from the ground/subsurface water.



A pressurized distribution system is required where engineered soil is used to comply with the requirements for minimum vertical setback to ground/subsurface water (Refer to Soil Replacement section). The total absorption surface area required for the pressurized distribution system is determined in the manner as typical leach field. Additional effluent treatment including disinfection shall be required where the possibility of groundwater contamination exists.

9. Absorption rates that exceed 60 minutes for the water level to drop from the 5<sup>th</sup> to 6<sup>th</sup> inch do not meet the minimum requirements. Conversely, absorption rates of less than 5 minutes for the water to drop from the 5<sup>th</sup> to 6<sup>th</sup> inch shall not be accepted (Refer to Supplemental Treatment and Soil Replacement Requirements). OWTS with nonconforming absorption rates are required to either replace the native soil for absorption rate that exceed 60 Minutes per inch (MPI) or provide supplemental treatment of the sewage effluent prior to discharging into the receiving environment below ground surface for absorption rates of less than 5 MPI, as prescribed in Los Angeles County Code. (Refer to Supplemental Treatment and Soil Replacement Requirements)

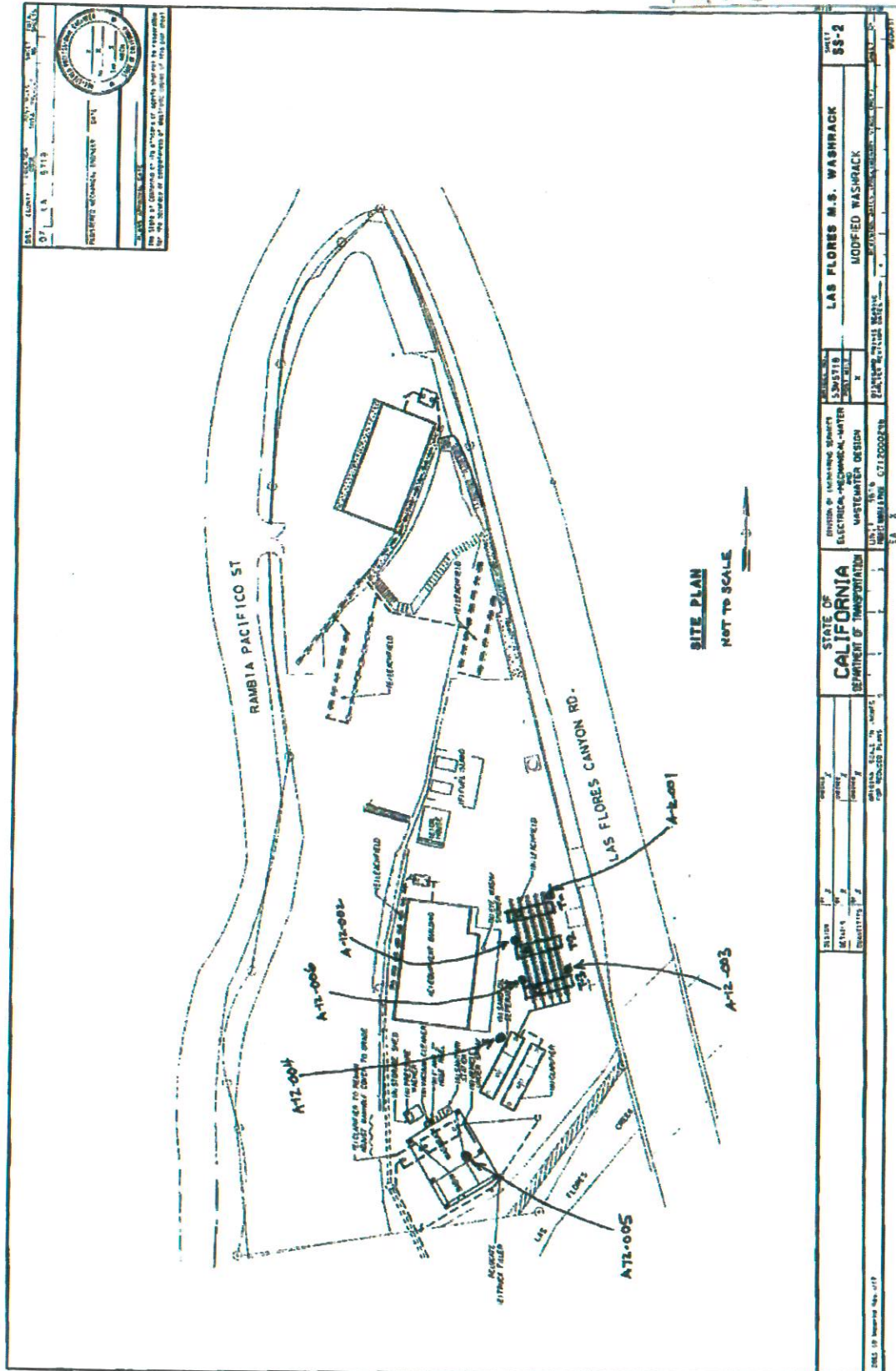
#### **Requirements Applicable to Percolation Testing for Seepage pits:**

- A. Results from the soil profile and percolation testing of different pits shall be accepted where the proposed seepage pits locations are within 35 feet of the actual soil profile and percolation testing area, where uniform geology has been established by a professional geologist, except where the proposed seepage pits are located in bedrock/hardpan/fractured rock formation.
- B. The soil profile excavation hole shall be down-logged by a California Professional Geologist or California Certified Engineering Geologist unless reasonably deemed unsafe by the Geologist. When reasonably deemed unsafe by the geologist the required information shall be obtained through alternative methods advised by the geologist.
- C. Every seepage pit located in bedrock, hardpan or fractured rock formation shall be tested to establish percolation rates for each individual pit.  
When test holes are required to be down-logged by Geological and Materials Engineering Division (GMED) of DPW, a copy of the field data shall be submitted to the Department.
- D. Where proposed future expansion areas are in bedrock, hardpan or fractured rock formation, the future pits shall be tested to establish percolation rates for each individual pit. When proposing a cluster system comprised of numerous pits, the Professional Geologist may request for reconsideration of this requirement in light of sufficient data that might support an alternative scope of testing. Such data should be presented to the local office prior to commencing the test procedure, in order to reach an agreement as to the scope of testing that will be required.
- E. When percolation testing holes cannot be filled to presoak or to conduct a conventional percolation test, the maximum absorption capacity allowed by the Los Angeles County Plumbing Code is considered to be exceeded. See note 4 below.

#### **Procedures for Percolation Testing of Seepage Pit Dispersal Systems:**

A circular boring with a minimum 2 foot diameter and maximum 6 foot diameter shall be excavated for percolation testing purposes. Approval shall be obtained prior to construction of any pit having an excavated diameter greater than 6 feet. No pits shall be finished,





## Appendix 2

### Boring Records



LOGGED BY <b>C. Harris</b>	BEGIN DATE <b>6-26-12</b>	COMPLETION DATE <b>6-26-12</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum) <b>1839388.297 ft / 6368110.540 ft</b>	HOLE ID <b>A-12-001</b>
DRILLING CONTRACTOR <b>Caltrans</b>			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION <b>138.35 ft</b>
DRILLING METHOD <b>Hollow-Stem Auger</b>			DRILL RIG <b>Mobile B47</b>	BOREHOLE DIAMETER <b>6 in</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>SPT</b>			SPT HAMMER TYPE <b>Safety</b>	HAMMER EFFICIENCY, ERI <b>57%</b>
BOREHOLE BACKFILL AND COMPLETION <b>Backfill</b>			GROUNDWATER DURING DRILLING READINGS <b>11.8 ft</b>	AFTER DRILLING (DATE) <b>20.7 ft</b>

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
138.35	1		Elastic SILT with SAND (MH) (FILL).	X	1	6	25	44							
136.35	2		Poorly graded SAND with GRAVEL (SP); medium dense; brown; dry; few GRAVEL; mostly coarse to fine SAND.	X	2	2	8	17							
134.35	3			X	3	11	50/1"	REF							
132.35	4		At EL. 134.8 ft, very dense												
130.35	5		At EL. 133.3 ft, light brown	X	4	34	60	REF							
128.35	6														
126.35	7														
124.35	8														
122.35	9														
120.35	10			X	5	100	REF	REF							
118.35	11		At EL. 126.5 ft, Ground Water												
116.35	12														
114.35	13														
	14														
	15														
	16														
	17														
	18														
	19		SEDIMENTARY ROCK, Bedrock ( Topanga Formation), weathered sandy Siltstone- Claystone, blue to blue green, dry fractured.												
	20			X	7	66	50/2"	REF							
	21		Bottom of borehole at 20.7 ft bgs Boring terminated as planned depth, backfilled with cuttings and seal with cold asphalt.												
	22														
	23														
	24														
	25														



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Geotechnical Services  
Office of Geotechnical Design - South 1

REPORT TITLE <b>BORING RECORD</b>				HOLE ID <b>A-12-001</b>
DIST. <b>07</b>	COUNTY <b>Los Angeles</b>	ROUTE <b>001</b>	POSTMILE <b>44.5/44.5</b>	EA <b>07-1W5101</b>
PROJECT OR BRIDGE NAME <b>Las Flores Maintenance Station</b>				
BRIDGE NUMBER <b>53M5718</b>	PREPARED BY <b>M. Islam</b>	DATE <b>7-10-12</b>	SHEET <b>1 of 1</b>	

CALTRANS BORING RECORD MET+ENG FIXED LAS FLORES M. STATION.GPJ CALTRANS LIBRARY 040808.GLB 8/1/12

LOGGED BY <b>C. Harris</b>	BEGIN DATE <b>6-26-12</b>	COMPLETION DATE <b>6-26-12</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum) <b>1839366.347 ft / 6368105.681 ft</b>	HOLE ID <b>A-12-002</b>
DRILLING CONTRACTOR <b>Caltrans</b>			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION <b>137.90 ft</b>
DRILLING METHOD <b>Hollow-Stem Auger</b>			DRILL RIG <b>Mobile B47</b>	BOREHOLE DIAMETER <b>6 in</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>SPT</b>			SPT HAMMER TYPE <b>Safety</b>	HAMMER EFFICIENCY, ERI <b>57%</b>
BOREHOLE BACKFILL AND COMPLETION <b>Backfill</b>			GROUNDWATER DURING DRILLING AFTER DRILLING (DATE) READINGS <b>11.4 ft</b>	TOTAL DEPTH OF BORING <b>21.5 ft</b>

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
135.90	1		Poorly graded SAND with GRAVEL (SP); medium dense; brown; dry; few GRAVEL; mostly coarse to fine SAND; trace fines; (mottled appearance).	1	13	26								
	2			2	14	24								
133.90	3				13	11								
	4		At EL. 134.4 ft, loose mostly fine SAND.	3	4	4								
	5				2	2								
	6			4	50									
131.90	7		Poorly graded GRAVEL with SAND and COBBLES (GP); very dense; light brown; dry; about 15% COBBLES; mostly GRAVEL; little SAND; COBBLES consist of.	REF										
	8													
129.90	9			5	70									
	10				REF									
127.90	11													
	12		At EL. 126.5 ft, Ground Water	6	16	41								
125.90	13				16	25								
123.90	14													
	15													
121.90	16			7	23	61								
	17				23	38								
119.90	18													
	19													
117.90	20													
	21		SEDIMENTARY ROCK, Bedrock ( Topanga Formation), weathered sandy Siltstone+ Claystone, blue green, dry, fractured.	8	16	60								
	22				28									
115.90	23		Bottom of borehole at 21.5 ft bgs Boring terminated as planned depth, backfilled with cuttings and seal with cold asphalt.		32									
	24													
113.90	25													



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REPORT TITLE <b>BORING RECORD</b>			HOLE ID <b>A-12-002</b>	
DIST. <b>07</b>	COUNTY <b>Los Angeles</b>	ROUTE <b>001</b>	POSTMILE <b>44.5/44.5</b>	EA <b>07-1W5101</b>
PROJECT OR BRIDGE NAME <b>Las Flores Maintenance Station</b>				
BRIDGE NUMBER <b>53M5718</b>		PREPARED BY <b>M. Islam</b>		DATE <b>7-10-12</b>
				SHEET <b>1 of 1</b>

CALTRANS BORING RECORD MET-ENG FIXED LAS FLORES M. STATION.GPJ CALTRANS LIBRARY 040808.GLB 8/1/12



LOGGED BY <b>C. Harris</b>	BEGIN DATE <b>6-26-12</b>	COMPLETION DATE <b>6-26-12</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum) <b>1839344.427 ft / 6368116.182 ft</b>	HOLE ID <b>A-12-003</b>
DRILLING CONTRACTOR <b>Caltrans</b>			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION <b>137.82 ft</b>
DRILLING METHOD <b>Hollow-Stem Auger</b>			DRILL RIG <b>Mobile B47</b>	BOREHOLE DIAMETER <b>6 in</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>SPT</b>			SPT HAMMER TYPE <b>Safety</b>	HAMMER EFFICIENCY, ERI <b>57%</b>
BOREHOLE BACKFILL AND COMPLETION <b>Backfill</b>			GROUNDWATER DURING DRILLING AFTER DRILLING (DATE) READINGS	TOTAL DEPTH OF BORING <b>6.3 ft</b>

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
135.82	1		Poorly graded SAND with GRAVEL (SP); medium dense; brown; dry; about 10% COBBLES; few GRAVEL; mostly coarse to fine SAND; about 10% cobbles.		1	6	20								
	2		At EL. 135.8 ft, very dense		2	14	38								
133.82	3					19									
	4		At EL. 134.3 ft, medium dense, 90% Sand, 10% Gravel		3	2	9								
	5					4									
131.82	6				4	REF									
	7		Bottom of borehole at 6.3 ft bgs Boring terminated as planned depth, backfilled with cuttings and seal with cold asphalt.												
129.82	8														
	9														
127.82	10														
	11														
125.82	12														
	13														
123.82	14														
	15														
121.82	16														
	17														
119.82	18														
	19														
117.82	20														
	21														
115.82	22														
	23														
113.82	24														
	25														

CALTRANS BORING RECORD MET+ENG FIXED LAS FLORES M. STATION.GPJ CALTRANS LIBRARY 040808.GLB 8/1/12



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Office of Geotechnical Design - South 1

REPORT TITLE <b>BORING RECORD</b>				HOLE ID <b>A-12-003</b>	
DIST. <b>07</b>	COUNTY <b>Los Angeles</b>	ROUTE <b>001</b>	POSTMILE <b>44.5/44.5</b>	EA <b>07-1W5101</b>	
PROJECT OR BRIDGE NAME <b>Las Flores Maintenance Station</b>					
BRIDGE NUMBER <b>53M5718</b>		PREPARED BY <b>M. Islam</b>		DATE <b>7-11-12</b>	SHEET <b>1 of 1</b>

LOGGED BY <b>C. Harris</b>	BEGIN DATE <b>6-27-12</b>	COMPLETION DATE <b>6-27-12</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum) <b>1839326.138 ft / 6368078.848 ft</b>	HOLE ID <b>A-12-004</b>
DRILLING CONTRACTOR <b>Caltrans</b>			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION <b>138.14 ft</b>
DRILLING METHOD <b>Hollow-Stem Auger</b>			DRILL RIG <b>Mobile B47</b>	BOREHOLE DIAMETER <b>6 in</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>SPT</b>			SPT HAMMER TYPE <b>Safety</b>	HAMMER EFFICIENCY, ERI <b>57%</b>
BOREHOLE BACKFILL AND COMPLETION <b>Backfill</b>			GROUNDWATER DURING DRILLING READINGS <b>15.3 ft</b>	AFTER DRILLING (DATE) <b>21.0 ft</b>

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
136.14	1		Poorly graded SAND with GRAVEL (SP); dense to very dense; dark gray to dark brown; dry; trace coarse to fine SAND.												
134.14	3			X	1	59	34								
	4					21									
	5					13									
132.14	6			X	2	16	26								
	7					13									
130.14	8														
	9														
128.14	10		At EL. 128.1 ft, lenses of Silt	X	3	100/3"									
	11					REF									
126.14	12														
	13														
124.14	14														
	15		SEDIMENTARY ROCK, Bedrock ( Topanga Formation), green, moist, Fractured.												
122.14	16		At EL. 122.8 ft, Ground Water	X	4	62									
	17					60									
	18					REF									
120.14	19														
	20														
118.14	21			X	5	65									
	22					80									
	23					REF									
116.14	24		Bottom of borehole at 21.0 ft bgs Boring terminated as planned depth, backfilled with cuttings and seal with cold asphalt.												
114.14	25														



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REPORT TITLE <b>BORING RECORD</b>				HOLE ID <b>A-12-004</b>	
DIST. <b>07</b>	COUNTY <b>Los Angeles</b>	ROUTE <b>001</b>	POSTMILE <b>44.5/44.5</b>	EA <b>07-1W5101</b>	
PROJECT OR BRIDGE NAME <b>Las Flores Maintenance Station</b>					
BRIDGE NUMBER <b>53M5718</b>		PREPARED BY <b>M. Islam</b>		DATE <b>7-11-12</b>	SHEET <b>1 of 1</b>

CALTRANS BORING RECORD MET+ENG FIXED LAS FLORES M. STATION.GPJ CALTRANS LIBRARY 040808.GLB 8/1/12



LOGGED BY <b>C. Harris</b>	BEGIN DATE <b>6-27-12</b>	COMPLETION DATE <b>6-27-12</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum) <b>1839274.900 ft / 6368081.743 ft</b>	HOLE ID <b>A-12-005</b>
DRILLING CONTRACTOR <b>Caltrans</b>			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION <b>136.43 ft</b>
DRILLING METHOD <b>Hollow-Stem Auger</b>			DRILL RIG <b>Mobile B47</b>	BOREHOLE DIAMETER <b>6 in</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>SPT</b>			SPT HAMMER TYPE <b>Safety</b>	HAMMER EFFICIENCY, ERI <b>57%</b>
BOREHOLE BACKFILL AND COMPLETION <b>Backfill</b>			GROUNDWATER DURING DRILLING AFTER DRILLING (DATE) READINGS <b>14.7 ft</b>	TOTAL DEPTH OF BORING <b>20.2 ft</b>

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
134.43	1		Poorly graded SAND with GRAVEL (SP); loose to medium dense; brown to dark bluish gray; dry; few GRAVEL; mostly medium to fine SAND; few fines.											
132.43	2			1	6	21								
	3				10									
	4				11									
130.43	5			2	3	5								
	6				3									
	7				2									
128.43	8													
	9													
126.43	10			3	51	53								
	11		SEDIMENTARY ROCK (SANDSTONE), light brown, some fine sand.		36									
	12				17									
124.43	13													
122.43	14													
	15		At EL. 121.7 ft. Ground Water											
120.43	16		SEDIMENTARY ROCK (SANDSTONE), cobble and medium sand, light brown, Sand and Cobbles.	4	12	78								
	17				40									
	18				38									
118.43	19													
	20		SEDIMENTARY ROCK (ANDESITE PORPHYRY), Bedrock ( Topanga Formation), light brown.	5	100/2									
116.43	21		Bottom of borehole at 20.2 ft bgs	REF										
	22		Boring terminated as planned depth, backfilled with cuttings and seal with cold asphalt.	REF										
114.43	23													
	24													
112.43	25													



Department of Transportation  
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Office of Geotechnical Design - South 1

REPORT TITLE <b>BORING RECORD</b>				HOLE ID <b>A-12-005</b>
DIST. <b>07</b>	COUNTY <b>Los Angeles</b>	ROUTE <b>001</b>	POSTMILE <b>44.5/44.5</b>	EA <b>07-1W5101</b>
PROJECT OR BRIDGE NAME <b>Las Flores Maintenance Station</b>				
BRIDGE NUMBER <b>53M5718</b>	PREPARED BY <b>M. Islam</b>	DATE <b>7-12-12</b>	SHEET <b>1 of 1</b>	

CALTRANS BORING RECORD MET+ENG FIXED LAS FLORES M. STATION.GPJ CALTRANS LIBRARY 040308.GLB 8/1/12

LOGGED BY <b>C. Harris</b>	BEGIN DATE <b>6-26-12</b>	COMPLETION DATE <b>6-26-12</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum) <b>1839343.012 ft / 6368106.854 ft</b>	HOLE ID <b>A-12-006</b>
DRILLING CONTRACTOR <b>Caltrans</b>	BOREHOLE LOCATION (Offset, Station, Line)			SURFACE ELEVATION <b>137.66 ft</b>
DRILLING METHOD <b>Hollow-Stem Auger</b>	DRILL RIG <b>Mobile B47</b>			BOREHOLE DIAMETER <b>6 in</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>SPT</b>	SPT HAMMER TYPE <b>Safety</b>			HAMMER EFFICIENCY, ERI <b>57%</b>
BOREHOLE BACKFILL AND COMPLETION <b>Backfill</b>	GROUNDWATER DURING DRILLING AFTER DRILLING (DATE) <b>11.8 ft</b>			TOTAL DEPTH OF BORING <b>20.5 ft</b>

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
135.66	1		Poorly graded SAND with GRAVEL (SP); loose; dark brown to brown; dry; few GRAVEL; mostly SAND.											
133.66	2													
131.66	3													
129.66	4													
	5													
	6			1	6	6								
	7				4									
	8				2									
	9		At EL. 129.2 ft, cobble											
127.66	10		Poorly graded GRAVEL with SAND and COBBLES (GP); dense to very dense; light brown; dry; about 5% COBBLES; mostly GRAVEL; some SAND; COBBLES consist of.	2	17	36								
	11				19									
	12				17									
125.66	13		At EL. 125.9 ft, Ground Water											
	14													
123.66	15													
	16			3	12	26								
121.66	17				12									
	18				14									
119.66	19													
117.66	20			4	100									
	21		Bottom of borehole at 20.5 ft bgs Boring terminated as planned depth, backfilled with cuttings and seal with cold asphalt.	REF										
115.66	22													
	23													
113.66	24													
	25													

CALTRANS BORING RECORD MET-ENG FIXED LAS FLORES M. STATION.GPJ CALTRANS LIBRARY 040808.GLB 8/2/12



Department of Transportation  
Division of Engineering Services  
Geotechnical Services  
Office of Geotechnical Design - South 1

REPORT TITLE <b>BORING RECORD</b>				HOLE ID <b>A-12-006</b>
DIST. <b>07</b>	COUNTY <b>Los Angeles</b>	ROUTE <b>001</b>	POSTMILE <b>44.5/44.5</b>	EA <b>07-1W5101</b>
PROJECT OR BRIDGE NAME <b>Las Flores Maintenance Station</b>				
BRIDGE NUMBER <b>53M5718</b>	PREPARED BY <b>M. Islam</b>	DATE <b>7-13-12</b>	SHEET <b>1 of 1</b>	





LasFloresRefs.dgn 8/10/2012 10:05:54 AM

